

WHAT IS CLAIMED IS:

1. A display device comprising:

a display section configured and arranged to display an image within a display region of a non-head mounted display screen;

5 a motion detecting section configured and arranged to detect a movement of the display section;

an image displacement computing section configured to compute a translational displacement of the display section based on the movement of the display section; and

10 a display control section configured to adjust a display position of the image within the display region of the display section based at least on the translational displacement of the display section.

2. The display device as recited in claim 1, wherein

15 the display section is configured and arranged to be fixedly coupled to a vehicle to display the image to a passenger inside the vehicle, and

the motion detecting section is further configured and arranged to detect the movement of the display section by detecting a movement of the vehicle.

3. The display device as recited in claim 2, wherein

20 the display control section is further configured to shift the image by an amount that substantially cancels the translational displacement of the display section.

4. The display device as recited in claim 2, further comprising

25 a passenger motion determining section configured and arranged to determine a passenger motion value indicative of a movement of a head portion of the passenger, and

30 a relative displacement computing section configured to compute a relative displacement between the display section and the head portion of the passenger based on the translational displacement of the display section computed by the image displacement computing section and the passenger motion value of the head portion of the passenger determined by the passenger motion determining section,

the display control section being further configured and arranged to shift the image displayed in the display section by an amount that substantially cancels the relative displacement.

5 5. The display device as recited in claim 4, further comprising
a head motion detecting section configured and arranged to detect the movement of
the head portion of the passenger,
the passenger motion determining section being further configured and arranged to
determine the passenger motion value based on a detection result from the head motion
10 detecting section.

6. The display device as recited in claim 4, wherein
the passenger motion determining section is further configured and arranged to
determine the passenger motion value based on at least one of a response function of
15 vibration of a human body corresponding to the passenger in response to the movement of
the vehicle and a numerical model indicative of the vibration of the human body in
response to the movement of the vehicle.

7. The display device as recited in claim 6, wherein
20 the passenger motion determining section is further configured and arranged to
determine the passenger motion value using a physique and a sitting posture of the
passenger as an estimate parameter.

8. The display device as recited in claim 6, wherein
25 the motion determining section is further configured and arranged to select the
response function of the vibration of the human body corresponding to a physique and a
sitting posture of the passenger estimated based on a distribution of a body pressure on a
seat on which the passenger is sitting.

9. The display device as recited in claim 2, further comprising
a center deviation computing section configured and arranged to compute a center
deviation between a center of the image and a center of the display region of the display
section,

5 the display control section being further configured and arranged to display the
image on the display section such that the center deviation is canceled.

10. The display device as recited in claim 9, wherein
the center deviation computing section is further configured and arranged to set the
10 center of the image using an average position of centers of a plurality of images
consecutively displayed in the display section within a prescribed period of time and
repeat computing the center deviation not faster than once every three seconds.

11. The display device as recited in claim 9, further configured
15 an acceleration/deceleration operation determining section configured and arranged
to determine whether the vehicle is accelerating or decelerating,
the center deviation computing section being further configured and arranged to
stop computing the center deviation upon determining that the vehicle is accelerating or
decelerating.

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12. The display device as recited in claim 11, wherein
the acceleration/deceleration operation determining section is further configured
and arranged to determine whether the vehicle is accelerating or decelerating by detecting
at least one of an accelerator pedal operation, a steering operation and a vehicle motion.

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13. The display device as recited in claim 10, wherein
an acceleration/deceleration operation determining section configured and arranged
to determine whether the vehicle is accelerating or decelerating,
the center deviation computing section being further configured and arranged to
30 stop computing the center deviation when it is determined that the vehicle is accelerating
or decelerating.

14. The display device as recited in claim 13, wherein
the acceleration/deceleration operation determining section is further configured
and arranged to determine whether the vehicle is accelerating or decelerating by detecting
at least one of an accelerator pedal operation, a steering operation and a vehicle motion.

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15. The display device as recited in claim 2, further comprising
an acceleration/deceleration operation determining section configured and arranged
to determine whether the vehicle is accelerating or decelerating,

the image displacement computing section being further configured to compute the
10 translational displacement divided into a low frequency displacement which is not
detectable by the passenger when the vehicle travels at a constant speed and a high
frequency displacement which is detectable by the passenger when the vehicle travels at a
constant speed,

the display control section being further configured to adjust the display position of
15 the image within the display region of the display section based on the low frequency
displacement and the high frequency displacement when the vehicle is accelerating or
decelerating and based on the high frequency displacement when the vehicle is not
accelerating or decelerating.

20 16. The display device as recited in claim 1, further comprising
a center deviation computing section configured and arranged to compute a center
deviation between a center of the image and a center of a display region of the display
section,

the display control section being further configured and arranged to display the
25 image on the display section such that the center deviation is canceled.

17. The display device as recited in claim 1, wherein
the display section, the motion detecting section, the image displacement
computing section and display control section are configured and arranged to be part of a
30 portable, hand held device.

18. The display device as recited in claim 17, wherein
the display control section is further configured to shift the image by an amount
that substantially cancels the translational displacement of the display section.

5 19. A display device comprising:
display means for displaying an image within a display region;
motion detecting means for detecting a movement of the display means;
image displacement computing means for computing a translational displacement
of the display means based on the movement of the display means; and
10 display control section means for adjusting a display position of the image within
the display region of the display means based at least on the translational displacement of
the display means.

20. A method comprising:
15 displaying an image within a display region of a display device;
detecting a movement of the display device;
computing a translational displacement of the display device based on the
movement of the display device; and
adjusting a display position of the image within the display region of the display
20 device based at least on the translational displacement of the display device.